

## Ch:3

### \* Managing the information systems Project

We Focus on Project management

→ to ensure that information system Projects meet Customer expectations such that:

- ⇒ Delivered in a timely manner.
- ⇒ meet Functional Constraints and requirements.

#### Project manager

→ responsible for:

- a) Project initiation.
- b) Planning.
- c) execution.
- d) Closing down

→ His activities include:

- a) management
- b) Leadership.
- c) Problem solving.
- d) conflict management.
- e) customer relations.

f) Team management.

g) Risk & change management.

# Project management Process

## → Project definition

→ Planned undertaking of related activities to reach an objective has a beginning and an end.

## Phases of Project management

### [1] initiation

- a) establish project initiation team.
- b) " relationship with customer.
- c) " project initiation Plan.
- d) " management Procedures.
- e) " project management environment and workbook.

### [2] Planning the Project

- describe project scope, alternatives and Feasibility.
- divide the project into manageable tasks.
- estimate resources & make resource Plan.
- develop preliminary schedule (Gantt & PERT charts)

→ develop communication plan among customers, team members and management.

→ Determine Project standards and Procedures and specify how output are tested and produced.

→ identify the assess risk.

- identify sources of risk.

- Estimate consequences of risk.

→ create a Preliminary budget.

→ set a Baseline Project Plan.

↳ estimate Project's tasks and resources.

### [3] Executing the Project

→ execute Baseline Project Plan.

- a) train new team members.

- b) Keep Project on schedule.

- c) Acquire and assign resources.

→ monitor Project Process

- a) adjust resources, budget and/or activities.

→ manage change to Baseline Project Plan

- a) changes in completion dates.

- b) changes in Personnel.

- c) new activities.



#### [4] closing down the Project

- Termination
  - Natural (requirements have been met)
  - unnatural (project stopped)
- Documentation.
- Personnel Assessment.

#### \* Gantt charts

- useful for depicting simple projects or parts of large projects
- show start and completion dates for individual tasks.

#### \* Pert chart

- show order of activities.
- ~~Key collection~~

Gantt	PERT
→ Visually shows duration of tasks.	→ Visually shows dependencies between tasks.
→ Visually shows time overlap between tasks.	→ Visually shows which tasks can be done in parallel.
→ Visually shows slack time.	→ shows slack time by data in rectangles.

## \* Estimating time

→ Project is broken down into:

a) Phases .      b) tasks or activities.

c) steps or smaller units.

→ time is estimated for each task or activity.

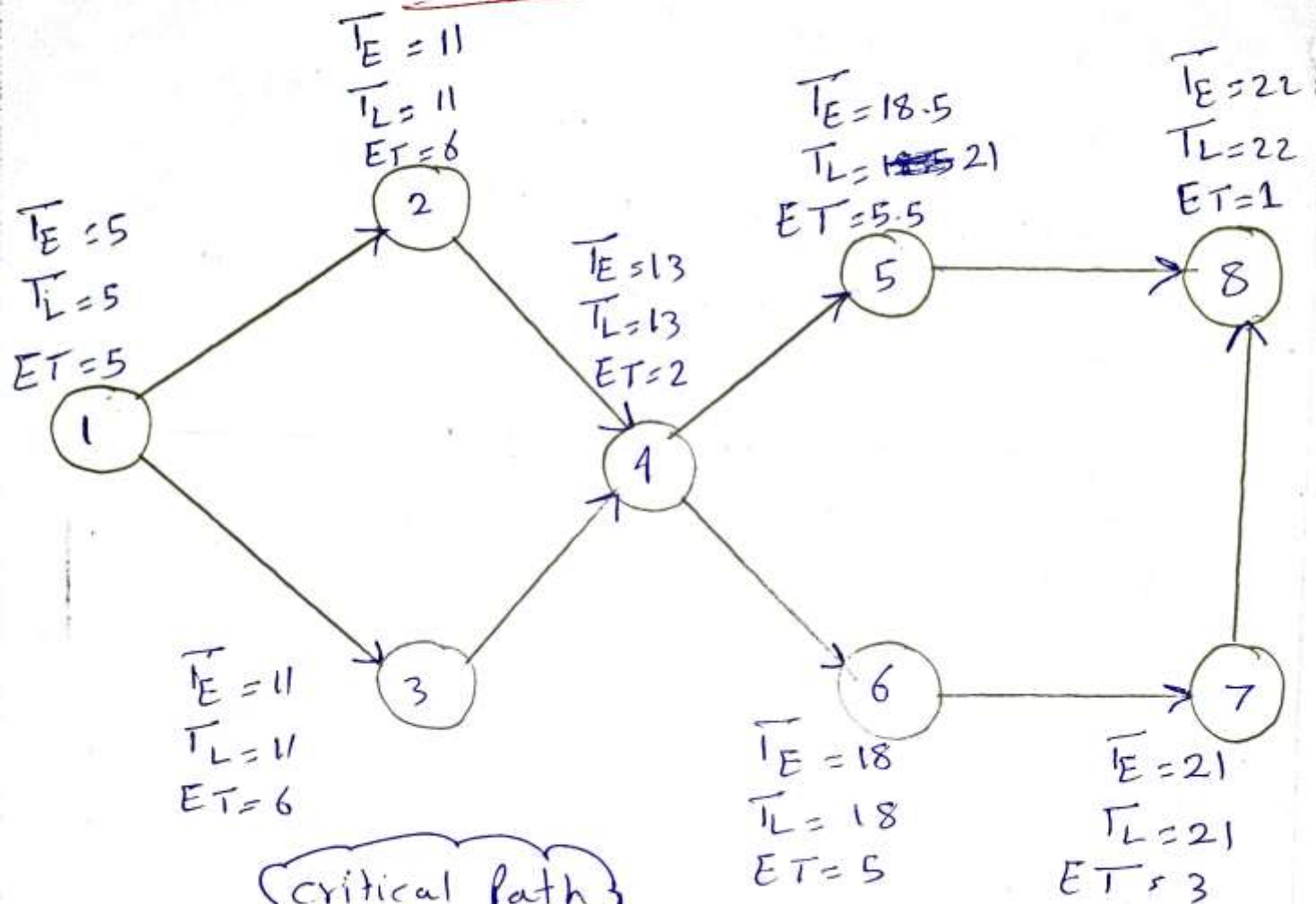
$$ET = (o + 4r + p) / 6$$

Activity.	Time estimate			Expected time (ET)
	o	r	p	
1) Requirements Collection	1	5	9	5
2) Screen design	5	6	7	6
3) Report design.	3	6	9	6
4) Database design	1	2	3	2
5) user documentation.	3	6	6	5.5
6) software programming	4	5	6	5
7) Testing.	1	3	5	3
8) installation.	1	1	1	1

⑤ Preceding activity



# sequence of Activities Pert chart



Activity	$T_E$	$T_L$	slacktime $T_L - T_E$	on critical path
1	5	5	0	✓
2	11	11	0	✓
3	11	11	0	✓
4	13	13	0	✓
5	<del>18.5</del> 18.5	21	2.5	—
6	18	18	0	✓
7	21	21	0	✓
8	22	22	0	✓



# Initiating and Planning system Development Projects

\* Deliverables and Outcomes:-

→ Baseline Project Plan (BPP)

(Scope, Benefits, Costs, Risks, Resources)

→ Statement of Work (SOW)

- Describe deliverables.

- outlines work needed to be performed.

## Assessing Project Feasibility

\* Six Categories

(Economic, technical, operational, schedule, legal and contractual, Political)

\* Tangible benefits

→ Can be measured easily in money.

Examples

- \* Cost reduction and avoidance.

- \* Error reduction.
- \* Increased flexibility.

- \* Increased speed of activity.

- \* Open new markets and increasing sales opportunities.

## \* Intangible Benefits

\* Cannot be measured easily in money.

### Examples

- \* increased employee morale/confidence.
- \* Competitive necessity.
- \* more timely information.
- \* Encouragement of organizational learning and understanding.



### A) Tangible Costs

↳ Can easily be measured in money.

### Examples

#### Procurement

\* Consulting Costs.

\* Equipment Purchase.

\* site Preparation.

\* management & staff time.

#### Project related

\* Application SW.

\* software modification.

### B) Intangible Costs

↳ cannot be easily measured in money.

### Examples

↳ loss of customer Kindness / Care.

↳ loss of employee confidence.





### \* One time Costs

↳ Associated with project startup, initiation and development.

#### Examples

- \* system development.
- \* site Preparation.
- \* new hardware or software purchases.
- \* user training.
- \* Data or system conversion.

### \* Recurring Costs

↳ Associated with ongoing use of system.

#### Examples

- \* Application software maintenance.
- \* Incremental data storage expense.
- \* new software and hardware releases.
- \* incremental communications.

## \* Time value of money

↳ Process of comparing present cash outlays to future expected returns.

→ All costs & benefits must be viewed in relation to their present value (PV)

$$PV_n = Y \times \frac{1}{(1+i)^n}$$

$i$ : constant = 0.1  
 $n$ : no. of ~~Y~~

	$Y_1$   $n=1$	$Y_2$   $n=2$   $n=3$	$Y_3$	
	1500	1500	1500	<del>1500</del>
PV	1363.636	1239.669	1126.97	
NPV	1363.636	2603.31	3730.275	

\* overall NPV = NPV of benefit - NPV of costs

\* overall ROI = overall NPV / NPV of all costs.

## Economic cost-benefit analysis techniques

### 1) Net Present Value (NPV)

used ~~a~~ discount rate to establish the present value of a project.

## 2) Return of investment (ROI)

→ ratio of net cash receipts of the project divided by cash outlays.

## 3) Break-Even analysis (BEA)

↳ Finds amount of time required for the cumulative cash flow from a project to equal its initial investment.

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## Assessment technical Feasibility

→ It is assessment of development organization's ability to construct a proposed system.

→ Project risk can be assessed based upon:-

\* Project size.      \* Project structure.

\* Development group's experience with the app.

\* User group's experience with development projects and application area.



### Project size

- no. of members on Project team.
- Project duration time.
- no. of organizational departments.

### Project Structure

- organizational, procedural, structural, or Personnel changes resulting for system.
- user perceptions and willingness.
- new system or renovation of existing system.

### Development Group

- Familiarity with proposed app. area.
- " with building similar systems of similar size.

		low structure	High structure
High Familiarity with technology or app. area.	Large	low risk	low risk
	<del>Project</del> Small Project	very low risk	very low risk
Low Familiarity with Technology or app. area	Large Project	very high risk	Medium risk
	Small Project	High risk	Medium-low risk

### \* Operational Feasibility

→ Assessment of how a proposed system solves business problems or takes advantage of opportunities.

### \* Schedule Feasibility

→ Assessment of time frame and project completion dates with respect to organization constraints for affecting change.

### \* Legal and Contractual Feasibility

→ Assessment of legal and contractual consequences of new sys. (Copyright, foreign trade regulations)

### \* Political Feasibility

→ Assessment of key stakeholders in organization's view toward proposed system.

### Project Failure

it may be prevented by

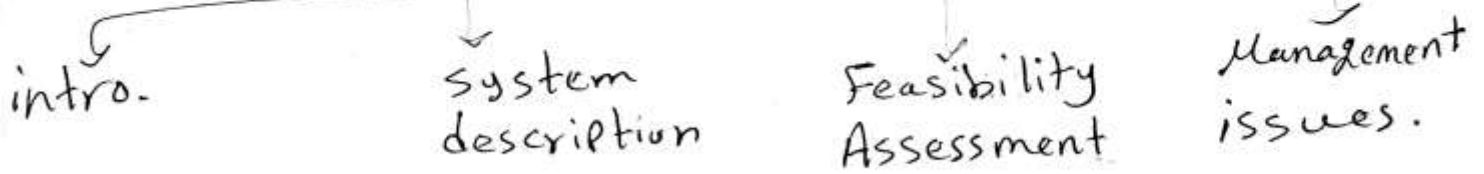
- a) training
- b) experience
- c) learning why other projects have failed.

# Building Baseline Project Plan

## objectives

- \* Assures that customer and development group have a complete understanding of proposed system and requirements.
- \* Provides sponsoring organization with clear idea of scope, benefits & duration of project.

## Four sections



## 1) Introduction

- \* Brief overview.
- \* recommended course of action.
- \* Project scope definition.
  - units affected.
  - interaction with other systems.
  - Range of system capabilities.
  - who inside and outside organization would be involved.



## 2) System description:

- outline of possible alternative solutions.
- Narrative & format of selected solution.

## 3) Feasibility assessment:

- Project costs & benefits. → technical difficulties.
- High-level project schedules.

## 4) Management Issues

- Team composition. → communication Plan.
- Project standards and procedures.
- other project-specific topics.

## Reviewing Baseline Project Plan

### \*objectives

- Assure conformity or organizational standards.
- All parties agree to continue the project.

### \*walkthrough

- It is a peer group view.
- recommends required changes.
- ensures that work product adheres to organizational technical standards.

→ في هذه القادحة عند حساب مثلا  $(PV \text{ of benefits})$

for Year 1

$$\text{Benefits} = 50000 \quad n = 1$$

$$PV \text{ of benefits} = V * \frac{1}{(1+i)^n}$$

$$= 50000 * \frac{1}{(1+0.1)^1} = 45454,5$$

وهذا مع باقي  
القيم ويطلب مع  
ال (Costs) برده

for getting NPV of benefits

~~$PV \text{ of Current benefit} + NPV \text{ of Previous}$~~

$= \text{Current PV of benefits} + \text{Previous NPV of benefits}$

at Year 2

$$NPV \text{ of benefits} = 86776,8$$

$$= \underbrace{41322,3}_{\text{Current PV}} + \underbrace{45454,5}_{\text{Previous NPV}}$$

→ وهذا مع ال (Costs)

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Σ
Benefits	0	50000	50000	50000	50000	50000	
PV of Benefits	0	45454,5	41322,3	37565,7	34150,67	31046,06	
NPV of Benefits	0	45454,5	86776,8	90533,5	124684,17	155730,2	155730,2
one time cost	42500	0	0	0	0	0	
Recurring cost	0	28500	28500	28500	28500	28500	
PV of Recurring cost	0	25909,09	23553,7	21412,47	19465,8	17696,25	
NPV of recurring cost	42500	68409,09	91962,79	113375,26	132841,06	150537,31	150537,31
overall NPV	NPV of benefits - NPV of costs						5192,89
ROI	overall NPV / NPV of all costs.						0.034

### Break-even analysis

Yearly NPV Cash Flow	42,500	19545,4	17768,6	16153,23	14684,87	13349,81	
overall NPV Cash Flow	42,500	22954,5	5185,99	22841,76	8156,89	5192,89	

Yearly NPV Cash Flow = PV of benefits - PV of costs

overall NPV Cash Flow = |NPV of costs - NPV of Benefits|



	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Yr
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